

ABSTRACT OF THE INVENTION

A natural (e.g., handwriting or speech) input recognition system and method that uses contextual mapping to improve recognition accuracy by biasing recognition based on the context of an input field. As natural input data is being entered into an application field, the context (type) of the field is determined and used to locate context-based validation rules and context-based user bias data. When entry is complete, the context-based validation rules and context-based user bias data are provided to a recognition engine with the natural input data. The recognizer biases its recognition result by using the rules and the user bias data to recognize the natural input. A field signature generator is described that determines each field's context, independent of the application, and a data harvesting engine is described that automatically collects user bias data from various data stores.